

APRIL/MAY 2025

CBC52/FBC52 — MOLECULAR BIOLOGY

Time : Three hours

Maximum : 75 marks

SECTION A — (10 × 2 = 20 marks)

Answer ALL questions.

1. What is DNA?
2. Summarize about inhibitors of replication.
3. What is the function of DNA-dependent RNA polymerase?
4. Outline the reverse transcription process.
5. What is wobble hypothesis?
6. Demonstrate the structure of prokaryotic ribosome.
7. What is an Inducer in gene expression?
8. Interpret about amplicon.
9. Recall about silent mutation.
10. Summarize the causes of mutation.



SECTION B — ($5 \times 5 = 25$ marks)

Answer ALL questions.

11. (a) Identify and explain the experiment conducted to prove DNA replicates by semi conservative mode.

Or

- (b) Simplify Generalized transduction with a neatly labeled diagram.

12. (a) Identify the Promoter regions in transcription.

Or

- (b) Analyze how tRNA is processed?

13. (a) Make use of genetic code to explain its deciphering nature.

Or

- (b) Examine the process of translocation in translation.

14. (a) Identify the structural organization of Lac Operon.

Or

- (b) Analyse the structure of Trp Operon.

15. (a) Organize the different types of DNA repair mechanism with its mode of action.

Or

- (b) Simplify and explain mutation due to change in the structure of chromosome.

SECTION C — ($3 \times 10 = 30$ marks)

Answer any THREE questions.

16. Appraise about Hershey chase experiment to prove DNA as the genetic material.

17. Explain 5' Capping and 3' Polyadenylation process.

18. Explain the process of targeting of proteins to particular organelles.

19. Define recombination. Elaborate on mechanism of recombination by Holliday model.

20. Compile about the different types of mutation.

